

S/062/60/000/006/013/025/XX
B020/B060

AUTHORS: Dubinin, M. M., Zhukovskaya, Ye. G., and Zaverina, Ye. D.

TITLE: Adsorption Properties of Carbon Adsorbents. Communication 5.
Characteristics of Water Vapor Sorption by Active Charcoals
in the Field of High Relative Pressures

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1960, No. 6, pp. 966-975

TEXT: The particular form of water-vapor sorption and desorption
isothermal lines on active charcoals has been repeatedly studied,
especially at the authors' laboratory (Refs. 1-5). The main ascent zone
of the sorption branch was found to correspond to the isotherm of
monomolecular adsorption. The concave form of the isotherm is a
consequence of the particular adsorption mechanism of water molecules on
the primary adsorption centers - the carbon monoxides on the surface - due
to the formation of hydrogen bonds, whereby every adsorbed water molecule
becomes a secondary adsorption center. These processes effect a steep

Adsorption Properties of Carbon Adsorbents. S/062/60/000/006/013/025/XX
Communication 5. Characteristics of Water B020/B060
Vapor Sorption by Active Charcoals in the
Field of High Relative Pressures

ascent of the adsorption branch of the isotherm (Refs. 3, 5). The main object of the work concerned was the study of water vapor sorption by active charcoals with different porous structures in order to clarify the possibility and the conditions of the capillary condensation course of water vapors in the intermediate pores. The investigation was extended to active charcoals with micropores of at most 10 Å diameter, whose intermediate porosity was developed to different degrees. From among them, the types P1-P5 (R1-R5) were granulated active coals from vegetable substances, Г1-Г4 (G1-G4) granulated active coals from fossils, and AY-10-AY14 (AU-10 - AU-14) active coals with developed intermediate porosity; they are described and thoroughly examined in Ref. 8. For the first two types, the sorption and desorption isothermal lines of benzene vapors were examined at 20° and at pressures of 1.10⁻⁵ to 1 atm, while for the latter mentioned, the sorption and desorption isothermal lines of benzene vapors were examined at 20°, and those of nitrogen at -195° (Ref. 8). The adsorption apparatus is accurately described in Ref. 9. Calculated volumes

Adsorption Properties of Carbon Adsorbents. S/062/60/000/006/013/025/XX
Communication 5. Characteristics of Water B020/B060
Vapor Sorption by Active Charcoals in the
Field of High Relative Pressures

of intermediate pores and micropores in active coals are indicated in Table 1. The method of the sorption balance was used in the study of water vapor isothermal lines at 20°. Sorption and desorption isothermal lines of the types R2, R1, R3, and R4 (Fig. 1) exhibit a distinct change of the slope of the isotherm branches after the section of the steep ascent, and, more precisely, they exhibit a sharper slope and in the region of high pressures a hysteresis loop covering a large zone. The isothermal lines of the types G3, G4, and R5 (Fig. 2) are shifted toward higher relative pressures; the zone of the hysteresis loop is fairly large and extends over almost the whole isotherm. The critical sorption volumes of active charcoals are intercompared for benzene and water. Calculated sorption volumes of water in micropores of active charcoals are compared with the volumes of coal micropores in Table 3. Table 4 gives data derived from Ref. 8 concerning the volumes of micropores and intermediate pores of active charcoals. Table 5 shows the distribution of the volume of sorbed water between micropores and intermediate pores in critical sorption.

Adsorption Properties of Carbon Adsorbents.
Communication 5. Characteristics of Water
Vapor Sorption by Active Charcoals in the
Field of High Relative Pressures

S/062/60/000/006/013/025/XX
B020/B060

Figs. 3 - 6 illustrate the sorption branches of the sorption isothermal lines of nitrogen vapors at -195° and of water at 20° for typical active charcoal specimens. There are 6 figures, 5 tables, and 13 references: 12 Soviet and 1 US.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

SUBMITTED: December 13, 1958

DUBININ, M.M.; ZHUKOVSKAYA, Ye.G.; ZAVERINA, Ye.D.

Adsorption properties of carbon adsorbents. Report No.5:
Characteristics of the sorption of water vapor by activated
carbon in the region of high relative pressures. Izv.AN
SSSR.Otd.khim.nauk no.6:966-975 J1 '60. (MIRA 13:?)

1. Institut fizicheskoy khimii Akademii nauk SSSR.
(Carbon, Activated) (Adsorption)
(Water vapor)

S/076/60/034/009/015/022
B015/B056

AUTHORS: Dubinin, M. M., Vishnyakova, M. M., Zhukovskaya, Ye. G.,
Leont'ev, Ye. A., Luk'yanovich, V. M., and Sarakhov,
A. I.

TITLE: Investigation of the Porous Structure of Solids by Sorption Methods. V. Application of Different Methods for Studying the Structure of Intermediate and Macro-pores of Active Coals

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 9,
pp. 2019-2029

TEXT: A thorough investigation of the structure of intermediate pores, whose size is between micro- and macro-pores, of some typical kinds of coal (from the type Ay-10 - Ay-14 (AU-10 to AU-14)) with intermediate porosity is carried out by the method of capillary condensation of vapors (benzene or nitrogen), by pressing in mercury, or by electron microscopy. Data concerning the volumes of the micro- and intermediate pores of the investigated kinds of coal are given in a table and show that in all

Investigation of the Porous Structure of Solids by Sorption Methods. V. Application of Different Methods for Studying the Structure of Intermediate and Macro-pores of Active Coals

S/076/60/034/009/015/022
B015/B056

samples the volumes of the intermediate pores exceed those of the micro-pores by a multiple. The sorption and desorption experiments carried out with nitrogen vapors at -195°C and benzene at 20°C a device with quartz scales. A detailed description of this device is given in Ref. 11. The sorption isothermal lines (Figs. 1-3) are all S-shaped and have a hysteresis, the beginning of which corresponds to the equilibrium pressure $(p/p_s)_o = 0.175$ for benzene at 20°C and $(p/p_s)_o = 0.45$ for nitrogen at -195°C. For the purpose of determining the porous structure by the method of pressing-in mercury, two pore gauges of the type ПА-4 (PA-4) (Ref. 8) (one for low and one for high pressure) were used. For electro-microscopic examinations a УЭМ-100 (UEM-100) electron microscope was used, carbon replicas were recorded (Fig. 5), and pore diameters from 70 to 110 Å were found. The summational curves (Figs. 6-8) of the volume of the intermediate pores with respect to their effective diameters, which were calculated from the sorption isothermal lines for benzene and were measured

Investigation of the Porous Structure of Solids by Sorption Methods. V. Application of Different Methods for Studying the Structure of Intermediate and Macro-pores of Active Coals

S/076/60/034/009/015/022

B015/B056

by pressing in mercury, showed good agreement. In the case of the results obtained for nitrogen, less good agreement was found. The electron-microscopic values qualitatively confirm the sorption values and the measured values obtained by pressing in mercury. B. P. Bering and V. V. Serpinskiy are thanked for their interest in the present paper. There are 8 figures, 1 table, and 13 references: 12 Soviet and 1 US.

ASSOCIATION: Akademiya nauk SSSR Institut fizicheskoy khimii
(Academy of Sciences USSR, Institute of Physical Chemistry)

SUBMITTED: December 24, 1958

Scanned 2/2

AUTHORS: Bering, B. P., Dubinin, M. M., Academician, S/020/60/131/04/041/073
Zhukovskaya, Ye. G., Serpinskiy, V. V. B004/B125

TITLE: Molecular Sieves as Adsorbents of the First Structural Type

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 4, pp 865 - 867 (USSR)

TEXT: The authors divide the porous adsorbents into structural types according to the size of their pores. Second structural type: silica gel with large pores and active coal with large pores. First structural type: silica gel with fine pores, active coal with fine pores, and zeolite. They tested whether zeolite belongs to the first structural type by means of the potential theory of adsorption developed in their institute. They present the equation of the adsorption isotherm (1), which establishes a linear relation between the logarithm of the adsorption a and the square of the logarithm of the relative pressure $h = p/p_s$. The isotherms of nitrogen and benzene in fine-pored silica gels (Ref 4) may be determined in a wide temperature range by determining the constants W and B of the equation (1) and the affinity β of the molecular volume v and the partial pressure p_s of the saturated vapor. For the molecular sieve "Linde 5A" the experiments were carried out with nitrogen at -195° . Figure 1 shows the results of

Molecular Sieves as Adsorbents of the First Structural Type S/020/60/131/04/041/073
B004/B125

the experiments. The curves of the adsorption of nitrogen and argon on chabazite according to reference 6 were added for comparison. The validity of the equation (1) was tested on the basis of the determined constants by calculation of the adsorption isotherms for chloromethyl on chabazite at 0, 50, and 100°. Figure 2 shows the result. The experimental data of R. M. Barrer and D. W. Brock (Ref 9) is entered for comparison. At 50° there is good agreement between the data calculated by the authors and the experimental data from reference 9. At 100° the experimental data is somewhat lower, at 0° somewhat higher; but the deviation is at most only 5%. The authors arrive at the conclusion that the equation (1) is applicable to the study of the adsorption on zeolite and that the molecular sieves may be considered adsorbents of the first structural type. There are 2 figures and 11 references, 7 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR)

SUBMITTED: December 30, 1959

Card 2/2

ZHUKOVSKAYA, Z. I.; KLIONSKAYA, R. I.; MORZON, N. P.

Technological and economic indicators of municipal heat, gas, and electric networks. Trudy Inst. energ. AN BSSR no.9:141-157 '59.

(MIRA 13:10)

(Heating from central stations)
(Electric power distribution)
(Gas manufacture and works)

ZHUKOVSKAYA, Z.I., kand.tehn.nauk

Efficiency of long-distance heat supply from central heating
and power plants fired with peat. Trudy Inst.energ.AN BSSR
no.3:25-39 '57. (MIRA 12:1)

(Heat engineering)

ZHUKOVSKAYA, Z.I.

Areas suitable for district heating and gasification.
Trudy Inst.energ. AN BSSR no.10:22-36 '59.

(MIRA 13:6)

(White Russia—Heating from Central stations)
(White Russia—Gas, Natural)

ZHUKOVSKAYA, Zoya Iosifovna; MINKOV, Vladimir Afraimovich; PEKELIS,
Grigorij Borisovich; PUT'KO, Ivan Ivanovich; Prinimali uchastie:
GALENCHIK, E.M.; KULAGA, T.N.; BEL'ZATSKAYA, L., red.
izd-va; TURTSEVICH, L., tekhn. red.

[Use of natural gas in power engineering] Ispol'zovanie prirodno-gaza v energetike. Minsk, Izd-vo Akad. nauk BSSR, 1962.
191 p. (MIRA 16:2)

1. Otdel obshchey energetiki Energeticheskogo instituta
Akademii nauk Belorusskoy SSR (for all except Bel'zatskaya,
Turtsevich).

(Power engineering) (Gas distribution)

SOV/112-58-1-204

Translation from: Referativnyy zhurnal, Elektrotehnika, 1958, Nr 1,
pp 26-27 (USSR)

AUTHOR: Zhukovskaya, Z. I.

TITLE: The Most Economical Site of a Suburban Heating-and-Power Station With
Respect to Peat Bogs, Sources of Water Supply, and the City (Ob ekonomicheski
naivygodneyshem razmeshchenii zagorodnoy TETs otnositel'no torfomassiva,
istochnika vodosnabzheniya i goroda)

PERIODICAL: Izv. AN BSSR, ser. fiz.-tekhn. n., 1956, Nr 3, pp 151-156

ABSTRACT: A mathematical method is suggested for solution of the problem of
rational placement of a suburban heating-and-electricity station depending on
the sites of (1) the weighted mean center of peat massif A, (2) water-supply
source B, and (3) junction point C between the long-distance heating line and
the city heating network. Certain average values of the costs (rubles/year km)
are assumed for: fuel delivery to the station (k_1), hot-water delivery from the
station to the city (k_2), and cold-water delivery to the station (k_3). The method

Card 1/2

SOV/ 112-58-1-204

The Most Economical Site of a Suburban Heating-and-Power Station With Respect
reduces the problem to finding out the minimum of a function of the form

$$U = \sum_{i=1}^{i=3} k_i a_i, \text{ where } a_i \text{ is the distance between the unknown point and the three}$$

points A, B, and C. Two versions of the problem are presented: the points A,
B, and C are situated at the vertices of a triangle and the same points are
situated along a straight line. The method does not allow for local conditions
but helps to figure out the site of the future construction.

Z. M. M.

AVAILABLE: Library of Congress

1. Power plants--Location
2. Fuels--Availability
3. Water--Availability
4. Construction--Economic factors

Card 2/2

ZHUKOVSKAYA, Z.I., kandidat tekhnicheskikh nauk

Expedient economical location for an out-of-town central Diesel-electric power station based on peat resources, water supply, and distance from the city. Vestsi AN BSSR, Ser. fiz.-tekhn. no. 3: 151-156 '56. (MIRA 10:1)

(Electric power plants) (Peat industry)

ZHUKOVSKAYA, Z. I., kandidat tekhnicheskikh nauk.

Selection of an economic diameter for long heat-conducting pipes.
Vestsi AN BSSR. Ser. fiz.-tekhn. nav. no. 4:153-156 '56. (MIRA 10:6)
(Heating pipes)

ZHUKOVSKAYA, Z.I.; FUT'KO, I.I.

Choice of optimum size of gas operated heating boilers. Trudy Inst.
energ. AN BSSR no.11:125-133 '60. (MIRA 14:9)
(Heating from central stations)

ZHUKOVSKAYA, Z.I.; FUT'KO, I.I.

Selection of optimum networks for the electric power supply of
small cities of the White Russian S.S.R. Trudy Inst. energ. AN
BSSR no.11:134-147 '60. (MIRA 14:9)

(White Russia--Electric power distribution)
(White Russia--Heating from central. stations)

ZHUKOVSKIY, A. A.

Zhukovskiy, A. A.: "Types of grapes in Garm Oblast of the Tadzhik SSR"
(Short report on the results of a study by the Scientific Research Institute
for Fruit, Wine, and Vegetable Culture, October 1946), Byulleten' po plodovod-
stvu, ovoshchvodstvu i vinogradarstvu, No. 9, 1948, p. 33-45.

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 10, 1949).

GUS'KOV, P.I., inzh.; ZHUKOVSKIY, A.A., inzh.

Instrument for automatically recording and measuring the slippage
of a belt on the driving roller of a conveyor. Izv. vys. ucheb.
zav.; gor. zhur. no.2:133-136 '61. (MIRA 14:3)

1. Chelyabinskij nauchno-issledovatel'skiy institut gornogo dela.
Rekomendovana kafedroy avtomatizatsii proizvodstvennykh protsessov
Sverdlovskogo gornogo intituta im. V.V. Vakhrusheva.
(Conveying machinery- Testing)

FEDOROV, V.F., kand. tekhn. nauk; ZHUKOVSKIY, A.A., inzh.

Apparatus for determining the efficiency of the motor of an electric drive. Izv.vys.ucheb.zav.;gor.zhur. 7 no.6:88-92 '64. (MIRA 17:12)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva (for Fedorov).
2. NIIOGR (for Zhukovskiy). Rekomendovana Kafedroy avtomatizatsii proizvodstvennykh protsessov Sverdlovskogo gornogo instituta imeni V.V.Vakhrusheva.

ZHUKOVSKIY, A.A., inzh.; IVANOV, E.A., inzh.; FEDOROV, V.P., inzh.

Instrument for the determination of the nonuniformity of
machine performance. Izv.vys.ucheb.zav.; gor.shur. no.7:
117-120 '60. (MIRA 13:7)

1. Chelyabinskij nauchno-issledovatel'skiy institut gornogo
dela. Rekomendovana kafedroy obshchey elektrotekhniki
Sverdlovskogo gornogo instituta.
(Machinery, Kinematics of)

ZHUKOVSKIY, A.B., kandidat ekonomicheskikh nauk.

Means of lowering the cost of precast reinforced concrete. Bet.1 shel.-bet.
no.9:307-310 S '56. (MIRA 9:10)
(Precast concrete construction)

ZHUKOVSKIY, Abram Borisovich; POZDNEV, A.I., spetsared.; KUZNETSOV, P.V.,
red.; PONOMAREVA, A.A., tekhn.red.

[Potentialities for the increase of the production of precast
reinforced concrete; technical and economic analysis] Reservy
promyshlennosti sbornogo zhelezobetona; tekhniko-ekonomiccheskii
analiz. Moskva, Gosplanizdat, 1960. 271 p.

(Precast concrete) (MIRA 13:7)

ZHUKOVSKIY, Abram Borisovich

Rezervy Promyshlennosti Sbornogo Zhelezobetona; Tekhniko-Ekonomicheskiy Analiz.
Moskva, Gosplanizdat, 1960.
271 p. charts, graphs, maps, tables. (Mnizhelezobeton)
Bibliographical Footnotes.

S/144/62/000/009/001/001
D234/D308

Theoretical basis ...

Investigations carried out on a model led to a simplified formula for M_c consisting of three factors. The factor depending on α is $(\sin \alpha)/(1 + B^2 - \cos \alpha)^{3/2}$ (B is a constant). It is found that the most favorable system is that consisting of a fixed core and a moving rod. The superposition of torques due to separate rods is found to be suitable for approximate determination of the dependence $M = f(\alpha)$ but not of absolute magnitudes of M_c . The fixed core is replaced by a set of rods and the degree of approximation depends on the number and distribution of these rods. The practical problem consists in determining the shape of the core for a given dependence of M_c on α . The author gives an integral equation for the function $\eta(x)$ determining the shape of the core. The kernel of the equation, M_c and $\eta(x)$ are represented as Fourier series and the coefficients of the $\eta(x)$ series are obtained as quotients of those of M_c and the kernel. The design method is described as follows: a) establishing the relation $M_c = f(\alpha)$, b) establishing the form of the fixed core on an arbitrary scale, c) determining the length of the moving core, d) determination of the radii, e) determination of maximum angular width.

✓B

ZHUKOVSKIY, A.D.

GRISHKOVA, Nadezhda Petrovna; GEORGIYEVSKAYA, Valentina Vladimirovna;
SAVIN, G.N., redaktor; LISHENBART, D.K., redaktor; ZHUKOVSKIY, A.D.,
tekhnicheskiy redaktor

Aleksandr Nikolaevich Dinnik. Kiev, Izd-vo Akademii nauk USSR,
1956. 50 p.

(MLRA 9:10)

1. Deystvitel'nyy chlen AN USSR (for Savin)
(Dinnik, Aleksandr Nikolaevich, 1876-1950)

YAKOVKIN, A.A., otvetstvennyy redaktor; LISSENBART, D.K., redaktor izdatel'stva;
ZHUKOVSKIY, A.D., tekhnicheskiy redaktor.

[Concise astronomical calendar for 1956] Kratkil' astronomiceskii
kalendari na 1956 god. Kiev, Vol.9. 1955. 93 p. (MLRA 9:6)

1. Akademiya nauk UkrSSR, Kiyev. Viddil fizyko-matematichnykh i khimich-
nykh nauk. 2. Chlen-korrespondent Akademii nauk Ukrainskoy SSR (for
Yakovkin). (Astronomy—Yearbooks)

ZHUKOVSKIY, A.I.

All-Union Bridge Construction Trust has been awarded the Order
of Lenin. Transp. stroi. 8 no.11:14-17 N '58. (MIRA 12:1)

1. Machal'nik Mostotresta.
(Bridge construction)

ZHUKOVSKIY, A.I.; SUYETIN, G.A., tekhn. red.

[Establishing wage norms and work compensation in the construction industry] Tarifnoe normirovaniye i oplata truda v stroitel'stve; uchebnoe posobie. Moskva, Mosk. zaochnyi stroit. tekhnikum transport. stroit.. 1962. 67 p.
(MIRA 16:9)
(Wages--Construction workers)

08091-67 EWT(1)/EWT(m) FDN/WB
ACC NR: AF6029992

SOURCE CODE: UR/0113/66/000/015/0196/0196

INVENTOR: Zhukovskiy, A. I., Orlovskiy, V. I., Melkov, N. N., Aleshin, V. A.; ⁵⁶
Kuteminskiy, Yu. A.; Valeev, F. Sh. /3

ORG: none

TITLE: A device for introducing additives while fueling aircraft. Class 62,
No. 184150

SOURCE: Izobret prom obraz tov zan, no 15, 1966, 196

TOPIC TAGS: aircraft fuel system, fuel additives, aircraft fuel system equipment

ABSTRACT: An Author Certificate has been issued for a device for introducing additives while fueling an aircraft. It contains a tank for the additives with a measuring glass, receiving neck, and a drain tap connected with a pipe through a pump, a flow tap, and a sprayer with a fuel-supply line. For the automatic regulation of the fuel additive, its pump is connected to a vane pump, which is inside the fuel-supply line and is spun by the flow of fuel. [SA]

SUB CODE: 21, 01/ SUBM DATE: 14Mar64

ZHUKOVSKI, S.Ya.

Certain characteristics karst in the lower Dnieper Valley. Vest.
Mosk.un.Ser.4: Geol. 15 no.2:60-67 Mr-Ap '60. (MIRA 14:4)

1. Kafedra gruntovedeniya i inzhenernoy geologii Moskovskogo
universiteta.

(Dnieper Valley—Karst)

ZHUKOVSKIY, A.I.; MITROFANOV, Yu.M.

Construction of the Ul'ianov elevated railroad and the
Vysokoyauza bridge in Moscow. Trans. stroi. 13 no.8;17-21
Ag '63. (MIRA 17:2)

1. Upravlyayushchiy Mostotrestom (for Zhukovskiy).

RITSOVA, V.V.; ZHUKOVSKIY, A.M.

Study of vaccinal immunity in persons vaccinated by live in-
fluenza vaccines. Vop. virus 8 no.5:605-608 S-01'63
(MIRA 17:1)

1. Institut virusologii imeni D.I. Ivanovskogo AMN SSSR, Moskva.

RITOVA, V.V.; ZHUKOVSKY, A.M. [Zhukovskiy, A.M.]; YEVSTIGNEVA, N.A.

Comparative study of the immunological properties of live
influenza vaccine in volunteers. J.hyg.epidem. '7 no.3:272-280
'63.

1. Ivanovsky Institute of Virology, Academy of Medical Sciences
of the U.S.S.R., Moscow.

*

ZHUKOVSKIY, Anatoliy Mikhaylovich

[Smallpox and its prevention] Ospa i ee preduprezhdenie. Moskva,
Medgiz, 1961. 30 p. (MIRA 14:11)
(SMALLPOX)

ZHDANOV, V.M.; RITOVA, V.V.; GEFEN, N.Ye.; ZHUKOVSKIY, A.M.;
BERLYANT, M.L.; YEVSTIGNEYEVA, N.A.; YEGOROVA, N.B.; KREYNIN,
L.S.; LEONIDOVA, S.L.; SERGEYEV, V.M.; SMIRNOV, M.S.

Comparative study of intranasal and aerosol methods of
vaccination against influenza. Zhur. mikrobiol., epid. i
immun. 33 no.11:63-67 N '62. (MIRA 17:1)

1. Iz Instituta virusologii imeni Ivanovskogo AMN SSSR.

ZHUKOVSKIY, A.P.

Luminescence of alkali halide phosphors activated by lead. Izv.
AN SSSR. Ser.fiz. 29 no.3:398-400 Mr '65.

(MIRA 18:4)

1. Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo
gosudarstvennogo universiteta.

ZELIKIN, Ya.M.; ZHUKOVSKIY, A.P.

Yellow luminescence of zinc oxide. Opt. i spektr. 11 no.3:
397-402 S '61. (MIRA 14:9)
(Zinc oxide)

31982
S/142/61/004/C04/003/018
E192/E382

13,2200 (1041,1057)

AUTHOR: Zhukovskiy, A.P.

TITLE: Simultaneous effect of fluctuation noise and signal
on a frequency-modulated radio range-finder receiver

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiotekhnika, v. 4, no. 4, 1961, 406 - 417

TEXT: A frequency-modulated range-finder receiver consists
of: an input filter; a detector and an output filter (see
Fig. 1). Three signals are applied to its input: two
frequency-modulated coherent signals U_A and U_B and a
random process having a uniform spectrum $U_W(t)$ (white noise).

The spectral characteristics of the signal and noise at the
output of the detector can be determined by the correlation
method. If a square-detector is used, the correlation function
of the noise at its output does not contain a correlation
coefficient $R(\tau)$ higher than that of the second degree. The
basic formula for the correlation function at the output of the
square-detector, if a regular signal $U_p(t)$ and a random

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31982
S/142/61/004/004/003/018
E192/E382

Simultaneous effect of

signal are applied to its input, is in the form:

$$\overline{X(t) \cdot X(t + \tau)} = \sigma^4 + 2\sigma^2 \overline{U_p}^2 + [\overline{U_p U_{p\tau}}]_2 + \overline{4U_p U_{p\tau} U_w U_{w\tau}} + \\ + 2[\overline{U_w U_{w\tau}}]^2 \quad (1)$$

where $\overline{U_p}^2$ is the average power of the regular signal,

$\overline{U_p U_{p\tau}}$ is the correlation function of the signal,

$[\overline{U_p U_{p\tau}}]_2$ is the correlation function of the square of the signal,

$\overline{U_w U_{w\tau}} = \sigma^2 R(\tau)$ is the correlation function of the random process, and

σ^2 is the spread.

31982
S/142/61/004/004/003/018
E192/E382

Simultaneous effect of

The second formula used in the analysis determines the spectrum at the output of the detector by using the inverse Fourier transformation, i.e.

$$G(f) = 4 \int_0^{\infty} X(t) \cdot X(t + \tau) \cos 2\pi f \tau d\tau \quad (2)$$

The output filter of the receiver (see Fig. 1) consists of n filters which have bandwidths ΔF , spaced at intervals F , where F is the modulation frequency. The filters are connected in parallel and form a parallel spectrum analyzer. This type of filter is the principal means of selecting the signal and suppressing the noise. By employing the above formulae, an attempt is made to determine the signal/noise ratio at the output of the filter. It is first assumed that the coherent signals U_A and U_B at the input have delays... Δt_1 and Δt_2 and are modulated sinusoidally. In the second case, the signals undergo sawtooth modulation. It is shown that the

Simultaneous effect of

31982
S/142/61/004/004/003/018
E192/E382

expression for the signal/noise ratio at the output is a function of the input powers of the two frequency-modulated signals, input noise σ^2 , the bandwidth of the input filter Δf_{in} , the overall noise bandwidth of the output filter, a coefficient $\varphi(f)$ determining the spectral density of the cross-modulation between the two signals and the noise at the output of the detector and a coefficient $p(n)$ defining the percentage of the overall power of the received signal, transferred to the strongest harmonic of the useful output power. The formulae are used to construct a number of graphs, from which it is found that the sawtooth frequency modulation gives a higher signal/noise ratio than the sinusoidal modulation; in particular, for delays $\Delta t \geq 0.01 T = 1/F$, the improvement in the signal/noise ratio at the output of the spectrum analyzer is about 10 d.b. The output signal/noise ratio is dependent on Δt but for $\Delta t = 0.5 T$ this ratio is a minimum for the sawtooth modulation. There are 5 figures and 5 Soviet-bloc references, one of which is translated from English.

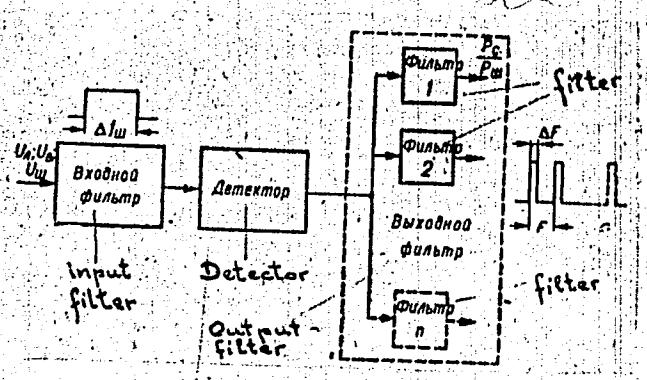
Simultaneous effect of

31902
S/142/61/004/004/003/018.
E192/E382

ASSOCIATION: Kafedra Moskovskogo aviationsionnogo instituta
im. Sergo Ordzhonikidze
(Department of the Moscow Aviation Institute
im. Sergo Ordzhonikidze)

SUBMITTED: September 15, 1960

Fig. 1:



Card 5/5

L-18746-63

EWP(q)/EWT(m)/BDS

AFFTC/ASD/ESD=3

FM/TD/MAY/10

S/29/1/63/001/000/0156/0160

ACCESSION NR: AT3002211

63

AUTHORS: Ivanova, N. I.; Zhukovskiy, A. P.

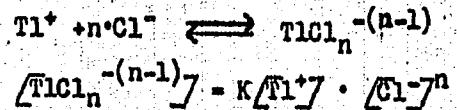
TITLE: On the luminescence center in thallium salt solutions

SOURCE: Optika i spektroskopiya; sbornik statey. v. 1: Lyuminesentsiya. Moscow, Izd-vo AN SSSR, 1963, 156-160

TOPIC TAGS: luminescence center, ionic complex, thallium chloride

ABSTRACT: This analysis is an extension and verification of a work by H. Fromherz (Zs. Phys. 68, 233, 1931), who assumes the structure of active luminescence centers to correspond to ionic complexes in solutions. A detailed study has been made of the inherent luminescence in TlCl solution and of its increase when luminescence centers are transferred into the absorption state. The luminescence intensity from a sample of TlCl is compared to the luminescent radiation of Tl₂SO₄ and TlNO₃ and found to be considerably stronger than both compounds for the same thallium concentration, indicating that Cl ions as well as thallium ions give rise to luminescence. An associative relationship is assumed between Tl ions and Cl ions in the form of a complex

L 18746-63
ACCESSION NR: AT3002211



and the sign of the complex is determined electrically to be negative. Further analysis shows a luminescence in the violet for undissociated thallium chloride, indicating the presence of electroneutral luminescent centers as well. Maximum TiCl absorption band is quoted to be in the region 225-230 nm μ . Orig. art. has 3 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 09Jun62

DATE ACQ: 19May63

ENCL: 00

SUB CODE: PH

NO REF SOV: 009

OTHER: 005

Card 2/2

L 16867-62

EWT(1)/EDS/SEC(b)-2 AFITC/ASD/SSD PI-4

8/0058/63/000/007/0080/D080

ACCESSION NR: AR3006307

SOURCE: RZh. Fizika, Abs. 7D583

60

AUTHOR: Ivanova, N.I.; Tarasova, N.I.: Zvezdnye materialy i perev.

TITLE: Possibility of existence of luminescence centers of the complex type in alkali-halide phosphors A

CITED SOURCE: Sb. Fiz. shchelochno-galoidn. kristallov. Riga, 1962,
149-155. Diskus., 155TOPIC TAGS: phosphor, alkali-halide crystal, luminescence center,
KCl-Tl, NaCl-Tl, KCl-Pb, NaCl-AgTRANSLATION: The luminescence of the phosphors KCl-Tl, Na-Tl,
KCl-Pb and NaCl-Ag, which contain impurities of two-charge cations
(Ca, Sr, Ba, Cd) in various concentrations has been investigated with
an aim toward studying the influence of microdefects on luminescence

L 16867-63

ACCESSION NR: ARJ006307

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centers. The change in the luminescence spectra in several phosphors with mixed bases (NaCl-KCl, KCl-KBr, KCl-RbCl, activated with Tl, and NaCl-KCl-Ag) was also investigated. The authors have arrived at the conclusion, on the basis of the obtained results, that the luminescence centers for the investigated systems represent complexes included in the crystal of the base in the form of an adsorption inclusion, with conservation of the intrinsic coordination; the ions of the activator, on the other hand, which are included in the base in the form of a solid substitutional solution, are not responsible for the radiation. Bibliography, 16 titles. T. Mekina.

DATE ACQ: 15Aug63

SUB CODE: PH

ENCL: 00

Card 2/2

IVANOVA, N.I.; ZHUKOVSKIY, A.P.

Luminescence centers of alkali halide phosphors doped with
divalent metals. Opt. i spektr. 12 no.1:114-116 Ja '62.

(MIRA 15:2)

(Phosphors—Spectra)

20822
S/048/61/025/003/010/047
B104/E201

24.3500 (1137, 1138, 1395)

AUTHORS: Ivanova, N.I., Tarasova, L.I., and Zhukovskiy, A.P.

TITLE: Formation of longwave luminescence bands of alkali halide phosphors

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya,
v. 25, no. 3, 1961, 341 - 343

TEXT: This is a reproduction of a lecture delivered at the 9th Conference on Luminescence (Crystal Phosphors), which took place in Kiyev from June 20 to 25, 1960. In the literature, opinions differ as to the nature of some luminescence bands of activated alkali halide phosphors (with one activator). Some authors believe that all luminescence bands are caused by energy transitions in one type of luminescence centers. Others, however, believe that there are two different types of luminescence centers, one type for the shortwave bands and the other for the longwave ones. The shortwave luminescence bands are typical of small activator concentrations and are ascribed to the activator ions placed in the cation sites of the fundamental lattice. There are various model representations for the cen-

20822

S/048/61/025/003/010/047
B104/B201

Formation of longwave ...

ters of the respective longwave bands; paired centers; activator ions at the fundamental lattice defects, etc. With a view to clarifying these problems, the authors studied the polarization of luminescence of a larger number of phosphors on the basis of Na and K halides. On the strength of results obtained, they believe that the various bands of a phosphor, and also those of phosphors being almost identical, are produced by centers of a different nature. The study included also the luminescence band of phosphors with a mixed fundamental lattice, and thus, the change of the luminescence spectrum of a pure phosphor to that of another pure phosphor. Here as well, the authors arrived at the conclusion that all luminescence bands of a phosphor belong to different centers, and that the centers themselves represent the type of a molecule of a complex compound of the salt of the basis with the activator. In a discussion following the present lecture, N.N. Kristofel' states that the "dimension" of the centers has a vibrational nature and that one may therefore in a certain sense speak of a quasi-molecule in the crystal. F.D. Klement believes that the above-mentioned results can be explained also on the basis of usual representations, without having to introduce hypothetical "complexes". There are

Card 2/3

20822

S/048/61/025/003/010/047
B104/B201

Formation of longwave ...

1 figure and 2 references: 1 non-Soviet-bloc. The reference to the English language publication reads as follows: Hirschlaff (Hutter) E., Pringsheim P., J. Chem., 16, 241 (1948)

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradsko-gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of Leningrad State University imeni A. A. Zhdanov

Card 3/3

ZHUKOVSKIY, A.P.

Spectrum analysis of signals in phase modulated radar systems.
Nauch.dokl.vys.shkoly; radiotekh.i elektron. no.4:164-175 '58.
(MIRA 12:6)

1. Moskovskiy aviationsionnyy institut.
(Radar)

ZHUKOVSKIY, A. S., ed.

A statistical reference book on the communications system. Moskva, Gos. izd-vo po tekhnike sviaze, 1934. 211 p. 49-44316

HE7055.25

1. Postal service—Russia. 2. Telecommunication—Russia.

ZHUKOVSKIY, A. S. ed.

Statisticheskii spravochnik po khoziaistvu sviazi. /Statistical handbook on communications/. Razrabotan brigadoi pod rukovodstvom Bordichenko i dr. Moskva, Gos. Izd-vo po tekhnike sviazi, 1934. 211 p.
"Istochniki": page at end.

DLC: HE7055.25

ZHUKOVSKIY, A.Y., professor; PRAKHOV, N.N.; PRIKHOD'KO, N.P.; LAZITSKAYA, L.N.

Effect of organomineral mixtures on potatoes. Agrobiologiya no.3:107-108
My-Je '56. (Potatoes) (Fertilizers and manures) (MLRA 9:9)

1. ZHUKOVSKIY, A. V., PETROVA, T. N.
2. USSR (600)
4. Moths
7. New data on the biology of the columnar moth Ochsenheimeria sp.
Zool. zhur. 31 No. 5, 1952
9. Monthly List of Russian Accessions, Library of Congress. January 1959

Name: ZHUKOVSKIY, Aleksandr Vasil'yevich

Dissertation: Biological peculiarities of the Hessian fly
"Mayetiolia destructor say" which determine its
mass reproduction and depression and resistance
of plants to damage

Degree: Doc Agr Sci

Affiliation: Voronezh Station of Protection of Plants

Defense Date, Place: 12 Mar 57, Council of the Leningrad Agr Inst

Certification Date: 18 May 57

Source: BiVO 15/57

ZHUKOVSKIY, A.V.

Mass multiplication outbreaks of the stinkbug *Barygaster integriceps*
Put. (Heteroptera, Pentatomidae) in the Central Black Region.
Ent. oboz. 38 no.4:717-723 '50 (MIRA 13:3)
(Central Black Earth Region--Barygasters)

ZHUKOVSKIY, B.D., kand.tekhn.nauk; ZIL'BERSHTEYN, L.I., kand.tekhn.nauk;
MANEVICH, F.D., kand.tekhn.nauk

Engineering properties of electrically welded pipes hardened by the
resistance method. Biul.nauch.-tekhn.inform.VNITI no.4/5:101-106
'58. (MIRA 15:1)

(Pipe, Steel--Testing)

ACC NR: AR6035421

SOURCE CODE: UR/0137/66/000/009/D043/L043

AUTHOR: Zhukovskiy, B. D.; Zil'bershteyn, I. I.; Yankovskiy, V. M.; Petrunin, Ye. P.; Guzevataya, L. I.

TITLE: Preparation of welded titanium tubing stock for cold working

SOURCE: Ref. zh. Metallurgiya, Abs. 9D281

REF SOURCE: Sb. Proiz-vo trub. Vyp. 16. M., Metallurgiya, 1965, 53-58

TOPIC TAGS: titanium, seam welding, weld defect, heat treatment, temperature dependence, cold working, flaw detection

ABSTRACT: To determine the continuity of the welded seam, the samples were subjected to x ray flaw detection, which showed that there were no flaws in the welded seam. The samples of the obtained tubes withstood tests for flattening until the tube walls came in contact. To eliminate residual stresses occurring during the manufacture of the welded tubes, heat treatment must be employed. The influence of the tube heat-treatment temperature on the residual stresses was investigated in the temperature interval 550 - 750° in steps of 50°. After determining by the method of N. N. Davidenkov the residual stresses in tube samples annealed at different temperatures, the authors established that heat treatment at 700 - 750° eliminates the stresses almost completely. Cold reworking of the obtained tube to dimensions 60 x 0.16, 48 x 0.4, and 48 x 0.2 mm has shown that the metal consumption is appreciably reduced and the number of passages is less than in cold working of seamless tubes, thus providing the

ACC NR: AR6035421

advantages of using welded tubes of technical titanium as stock parts. 5 illustrations, 1 table. L. Kochenova [Translation of abstract]

SUB CODE: 11, 13

ZHUKOVSKIY, B.D., kand.tekhn.nauk; ZIL'BERSHTYN, L.I., kand.tekhn.nauk;
MIZRA, V.I., inzh.

Effect of electrode diameter on the process of butt-seam
welding of pipes. Svar.proizv. no.7:11-13 J1 '60.
(MIRA 13:7)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut.
(Pipe-Welding) (Electrodes)

82287

S/135/60/000/007/003/014

A006/A002

18-7200

AUTHORS: Zhukovskiy, B.D., Candidate of Technical Sciences, Zil'bershteyn,
L.I., Candidate of Technical Sciences, Mizera, V.I., Engineer

TITLE: The Effect of the Electrode Diameter on Roller-Butt Welding Pipes

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 7, pp. 11-13

TEXT: For the purpose of increasing the welding speed without raising the current frequency in roller-butt welding the authors investigated the possibility of increasing the length of the welding seat and consequently the actual welding time. The study of phenomena occurring in the welding seat shows that its length depends to a considerable degree on the electrode diameter. Calculations prove that the length of the welding seat increases particularly intensively if the electrode diameter is enlarged to 500-600 mm. Pipe welding tests with electrodes of 500-550 mm in diameter were carried out on a "6-30" welding machine at the Moskovskiy trubnyy zavod (Moscow Pipe Plant) Workers of the Plant, Engineers Ye.N. Khoroshev, R.V. Golovkin, and V.I. Kononova participated in the experiments. X

Grade "10" steel pipes of 17 x 1 mm dimensions were welded in 23 variants at a current frequency of 50 cycles. Welding was performed at the same speed on 4.5 that the supplied power varied within the

82287

S/135/60/000/007/003/014
A006/A002**The Effect of the Electrode Diameter on Roller-Butt Welding Pipes**

limits of these values causing non-fusion on the one hand and burns of the pipe surface on the other hand. To verify the quality of welding, unannealed pipe specimens were subjected to conic expansion, and flattening until their breakdown. The results of the tests were in agreement with GOST Standard requirements and were used to set up optimum welding conditions (Table 3). The most important conclusion drawn from the experimental investigation is the possibility of increasing the welding speed of electric pipe welding machines by using large-diameter electrodes, without increasing the current frequency. Such an increase in the speed may be developed on the "10-60" and "51-152" machines without any important modifications in their design. At the Yuzhnotrubnyy metallurgicheskiy zavod (Yuzhnotrubnyy Metallurgical Plant) at Nikopol', "10-60" welding machines were converted to a maximum welding speed of 45 m/min instead of 32 m/min without increasing the current frequency. Pipes of 15x1.25 and 20x1.5 mm were welded at a speed of 45 m/min and pipes of 22x2, 29x2, and 32x2.0 mm at a speed of 40 m/min. Hydraulic tests yielded satisfactory results. There are 2 figures, 3 tables and 3 Soviet references.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (Ukrainian Scientific Research Institute of Pipes)

S/137/61/030/007/050/072
A060/A101

AUTHORS: Zhukovskiy, B. D.; Fomichev, I. A.; Manevich, F. D.; Shoshin,
V. A.

TITLE: Present state of theory and direction of development of the process
of forming pipe stock on continuous pipe molding mills

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 7, 1961, 38, abstract 7D303
("Tr. Ukr. n.-i. trubn. in-ta", 1959, no. 2, 136-146)

TEXT: The existing methods of molding pipe stock on continuous pipe-molding
mills by means of 2 or 4 rolls (with radius decreasing along the pass, 2 radii,
one radius with flat central part) as well as the possibility of applying each of
these methods in the molding of thin-walled and thick-walled, small diameter and
large diameter pipes, are analyzed. The effect of neighboring stands on the
process of skelp deformation, the rise of zones in the contactless deformation of
skelp, leading to an elongation in skelp edges and the possibility of the appear-
ance of corrugations or even loss of stability of the profile are considered.
It is recommended to set up roll or continuous conduits between molding stands.

Card 1/2

Present state of theory and direction ...

S/137/51/000/007/050/072
A060/A101

Experiments are reported regarding tests of molding with conduits of pipes 30 x 0.3 and 152 x 3.25 mm. Bibliography contains 9 names.

V. Tsirul'nikov

[Abstracter's note: Complete translation]

Card 2/2

SOV/135-59-10-13/23

18(5)
AUTHOR:Zhukovskiy, B.D., Candidate of Technical Sciences

TITLE:

Determination of the Length of the Heated Zone During Electric
Roll-Buttwelding of Pipes

PERIODICAL:

Svarochnoye proizvodstvo, 1959, Nr 10, pp 29-31 (USSR)

ABSTRACT:

Two computational arrangements for the determination of the length of the heated zone at welding are described in the article. The basic factors for this calculation are the treating time and the welding speed v . The dependency between these are shown in equation 1:

$$\tau = \frac{S}{v}. \quad (1)$$

The first calculation scheme (Ref.1) depends on the round size diameter d . Details are shown in fig.1. The distance S appears in this case in the equation 2: $S = \sqrt{R(\frac{b}{\pi} + t - d)} - \frac{1}{4}(\frac{b}{\pi} + t - d)$.

But in this layout, the considerable radius of the welding electrodes is neglected. The other arrangement starts from the deformation of pipes by the electrodes (Ref.2), (Fig.1b). In this case,

Card 1/2

Sov/135-59-10-13/23

Determination of the Length of the Heated Zone During Electric Roll-Buttwelding
of Pipes

the length of the heated zone is given by the equation 3:

$$S = \sqrt{0.5\left(\frac{B_s}{\pi} - D_c\right) \left[D_e - 0.5\left(\frac{B_s}{\pi} - D_c\right)\right]}, \quad (3)$$

where D_c is the diameter of the pipe after welding, B_s is the width of the belt and D_e is the diameter of the electrode. Fig.5 shows the dependency between length of heated zone, diameter of electrode and thickness of the pipe walls. There are 2 photographs, 2 diagrams, 2 graphs, 1 table and 2 Soviet references.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (UkrNITI)
(Ukrainian Scientific Research Institute for Pipes)

Card 2/2

135-58-7-7/20

AUTHOR: Zhukovskiy, B.D., Candidate of Technical Sciences

TITLE: Contact Resistance of Parts in the Welding Process (O kontaktnom soprotivlenii detaley pri svarke)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 7, pp 23-26 (USSR)

ABSTRACT: The accuracy of the existing method of determining the dimensions of welding contacts is discussed and questioned. The conclusion is made that in cases of actual bodies in contact, it is necessary to take into consideration their shape, dimensions, distribution of external loads, and the real area of macroscopic contact between an electrode and a part or between a part and another part, for every actual case. There are 3 schematic drawings, 15 graphs, 6 Soviet and 1 English reference.

ASSOCIATION: VNITI

1. Spot welding--Resistance

ZHUKOVSKIY, B.D., kand. tekhn. nauk

Contact resistance of parts during welding. Svar. proizv. no. 7:23-
26 '58.

(MIRA 11:7)

1. Vsesoyuznyy nauchnyy institut tekhnicheskoy informatsii(VNITI).
(Electric welding)

ZHUKOVSKIY R.D.
ZHUKOVSKIY, B.D., kand. tekhn. nauk.

Effect of the gap between electrodes on heating during roll butt
welding of pipes. Svar. proizv. no.2:35-39 F '58. (MIRA 11:2)

1. VINITI.
(Electric welding) (Pipe--Welding)

ZHUKOVSKIY, B.D.; ZIL'BERSHTEYN, L.I.; OSADA, Ya.Ye.; CHEKMAROV, A.P.

[Electric welding of pipes by the resistance method] Proizvodstvo trub elektrosvarkoj metodom soprotivleniya. Pod.red. A.P.Chekmareva. Moskva, Gos.nauchno-tehn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. (MIRA 7:6) 461 p.

1. Deystvitel'nyy chлен АН Ukrainskoy SSR (for Chekmarov).
(Electric welding) (Pipe--Welding)

SOV-135-58-2-10/18

AUTHOR: Zhukovskiy, B.D., Candidate of Technical Sciences

TITLE: Effect of the Inter-Electrode Gap on the Heating Process
in Roller Butt Welding of Pipes (Vliyanie zazora mezhdu
elektrodami na nagrev pri roliko-stykovoy svarke trub)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 2, pp 35 - 39 (USSR)

ABSTRACT: The described experimental investigation was carried out
in order to calculate the optimum inter-electrode gap for
roller welding of pipes, in accordance with the determined
heat distribution in the pipe walls and the dissipation of
heat in the electrodes. The following inter-electrode gaps
are recommended: S in mm 1 - 2 2.5 - 6 > 6 is B
in mm 3 - 4 5 - 6 $B = S$; where S is the wall
thickness and B is the inter-electrode gap. There are 4
diagrams, 12 graphs, 1 photo and 3 Soviet references.

ASSOCIATION: VINITI

SOV/137-59-2-4322

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 2, p 284 (USSR)

AUTHORS: Zhukovskiy, B. D., Zil'bershteyn, L. I., Manevich, F. D.

TITLE: Technological Properties of Resistance-welded Pipes (Tekhnologicheskiye svoystva elektrosvarnykh trub, izgotovlyayemykh metodom sопротивлениya)

PERIODICAL: Byul. nauchno-tekhn. inform. Vses. n.-i. trubnyy in-t, 1958, Nr 4-5, pp 101-106

ABSTRACT: In accordance with the specifications of the GOST 1753-53 standard, electrically-welded pipes (P) are supplied in annealed as well as in the untreated state. Flattening tests were carried out on specimens of untreated and annealed pipes (63 mm in diameter and a wall thickness up to 2.5 mm) made of Steel 10 and on untreated pipes 70-152 mm in diameter with a wall thickness of 5 mm; tests involving a 6% expansion accomplished with a cone-shaped mandrel were performed on annealed and untreated pipes with diameters up to 51 mm as well as on untreated pipes with diameters ranging from 89 to 114 mm. Both types of tests demonstrated that the ability of the pipe to withstand flattening and expansion tests without weld failure is significantly enhanced by

Card 1/2

SOV/137-59-2-4322

Technological Properties of Resistance-welded Pipes

annealing. Experimental flanging indicated that annealed electric-welded pipes may be employed in installations requiring flanged coupling of pipes. In many instances, the results of flattening tests, expansion with a cone-shaped mandrel, and flanging of electrically-welded pipes satisfy the requirements imposed upon the technological properties of seamless pipes; the author is, therefore, of the opinion that seamless pipes may be expediently replaced by electrically-welded pipes in manifold industrial applications.

Ye. T.

Card 2/2

ZHUKOVSKIY, B. D., kand. tekhn. nauk

Production of electrically welded pipes of small and medium
diameters. Met. i gornorud. prom. no.1:31-34 Ja.-I-63.
(MIRA 16:4)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut.

(Pipe, Steel—Welding)

18(5), 25(1)

SOV/135-59-7-13/15

AUTHOR: Zhukovskiy, R.D., Candidate of Technical Sciences,
Zil'fershteyn, I.M., Candidate of Technical Sciences
Golovkin, R.V., Engineer

TITLE: Resistance Seam-Butt Welding of Pipes by Higher Frequency Currents

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 7, pp 42-45 (USSR)

ABSTRACT: The authors present the results of an experimental investigation of the influence of the welding current frequency on the quality of pipe welding seams at different welding speeds. The experiments were conducted on a pipe welding machine of type 20-102 of the Moskovskiy trubnyy zavod (Moscow Pipe Plant) designed for welding tubes with a diameter of up to 102 mm at a maximum welding speed of 60 m/min at a nominal capacity of the rotary transformer of 500 kva. The machine received power from a converter unit consisting of two basic generators, and an auxiliary exciter. The electrical circuit diagram is shown in

Card 1/4

SOV/135-59-7-13/15

Resistance Seam-Butt Welding of Pipes by Higher Frequency Currents

Fig. 2. The authors remarked that the experimental installation had a number of deficiencies, the analysis of which is beyond the scope of this paper. These deficiencies must be eliminated when developing new converters. The test results depend to a considerable degree on the conditions of the tubes to be welded. Thermal treatment improves considerably the quality of the electrically welded tubes. When welding tubes of 33 x 1.5 mm at a speed of 40 - 50 m/min, a frequency increase to 150 cycles improved considerably the strength of the welding seam. At a speed of 30 m/min a change of the current frequency did not show any essential influences. Increasing the frequency to 300 cycles at welding speeds of 40 - 60 m/min did not produce a noticeable improvement of welding seam strength. When welding tubes of 33 x 2.5 mm at a speed of 30 - 50 m/min, an increase of the welding seam strength is observed when increasing the frequency to 100 cycles. A further frequency increase reduced the

Card 2/4

SCV/135-59-7-13/15

Resistance Seam-Butt Welding of Pipes by Higher Frequency Currents

strength of the seam. A considerable strength reduction of the seam was observed when welding tubes of 45 x 3 mm at a speed of 40 m/min at a frequency increased to more than 100 cycles. At welding speeds of 20 - 30 m/min, a frequency change within the range of 50 - 200 cycles did not have an essential influence on the strength of the seam. Welding tubes of 102 x 2.0 mm showed that, at a speed of 20 - 50 m/min, an increase of the current frequency to 150 cycles does not produce a considerable change of the welding seam strength. But already at a speed of 30 m/min, some reduction of the strength was noticed, at a frequency higher than 100 cycles. Consequently, when welding tubes on the machine type 20 - 102 with a speed of 30 - 60 m/min, the best results, according to technological tests, were obtained at frequencies ranging from 100 - 150 cycles. This conclusion does not mean in any way that a further increase of the frequency is not to be made in principle. There are no founda-

Card 3/4

SOV/135-59-7-13/15

Resistance Seam-Butt Welding of Pipes by Higher Frequency Currents

tions for assuming that a frequency increase to 300 - 350 cycles will lead to a reduction of the welding seam strength as this was observed in the authors' experiments. The authors present the test results in 9 graphs and 1 table. The experiments further showed that a continuous frequency control is not necessary. It is sufficient to increase frequency range at intervals of 50 cycles. It may be assumed that the application of welding transformers with small electrical losses will facilitate the application of converters with an uncontrolled frequency of 150 cycles. There are 1 photograph, 1 circuit diagram, 9 graphs, 1 table and 3 references, 2 of which are Soviet and 1 English.

ASSOCIATION: UkrNITI Moskovskiy trubnyy zavod (Moscow Pipe Plant)

Card 4/4

ZHUKOVSKIY, B.D., kandidat tekhnicheskikh nauk; ZIL'BERSHTEYN, L.I., kandidat
tekhnicheskikh nauk.

Effect of surface smoothness of tubings upon the quality of tube welding.
Vest.mash. 34 no.5:82-84 My '54. (MLRA 7:6)
(Electric welding) (Tubes)

MATLAKHOV, L.I.; TATSYUK, G.Z.; ZHUKOVSKIY, B.D.; ZIL'BERSHTEIN, L.I.

Manufacture of electrically welded pipe without formation of
internal burrs. Biul. TSIICH no.5:48 '61. (MIREA 14:10)
(Pipe, Steel-Welding)

ZHUKOVSKIY, B.D., kandidat tekhnicheskikh nauk; KIL'BERSHTEYN, L.I., kandidat tekhnicheskikh nauk; MANEVICH, F.D., kandidat tekhnicheskikh nauk.

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COLUMN VARIABLE HOLES		1ST AND 2ND LETTERS										3RD LETTER		3RD AND 4TH ORDERS										5TH AND 6TH ORDERS		7TH AND 8TH ORDERS									
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R		Kuznetsov, A. N., and Zhukovskii, N. I.										ALUMINA AND ITS SALTS. U.S.S.R. Pat. 280, July 27, 1975.—Al silicate, clay, or corundum containing admixtures of SiO ₂ , are re- duced in an electric furnace. To convert all the SiO ₂ of the material into Si-Al, Ba compounds sufficient for the formation of Ba aluminates are added to the charge. The Ba aluminates obtained are decomposed with H ₂ O, nickel or alkali sulfates or carbonates.		MATERIALS INDEX										CLASSIFICATION											
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101000 MAF GNV DSI		W X Y Z										A B C D E F G H I J K L M N O P Q R S T		U V W X Y Z										A B C D E F G H I J K L M N O P Q R S T											